

WE CLAIM:

1. A method for identifying cytotoxic mutant proteins capable of binding to a target cell, comprising:
- 5 (A) selecting a heteromeric protein toxin having a toxic subunit and a binding subunit;
- (B) generating a library of microorganism clones producing variant protein toxins of said heteromeric protein toxin by incorporating mutations into the binding subunit DNA of the heteromeric protein toxin; and
- 10 (C) screening the variant protein toxins of said library against said target cell by isolating clones or pools of clones producing said variant protein toxins, treating preparations of said target cell with said variant protein toxins, and selecting a cytotoxic mutant protein or pool of cytotoxic mutant proteins that inhibits or kills said target cell.
- 15 2. The method as claimed in claim 1, wherein said target cell is eukaryotic.
3. The method as claimed in claim 1, wherein said library comprises bacteria or bacterial supernatants containing said variant protein toxins.
- 20 4. The method as claimed in claim 1, wherein said library comprises yeast or yeast supernatants containing said variant protein toxins.
5. The method as claimed in claim 1, wherein said binding subunit DNA is in a plasmid in said microorganism.
- 25 6. The method as claimed in claim 1, wherein said mutation is incorporated into said binding subunit by use of a combinatorial cassette method comprising:
- 30 (A) preparing synthetic mutant oligonucleotides capable of annealing with a corresponding wild type oligonucleotide from said binding subunit;
- (B) annealing said synthetic oligonucleotide from said binding subunit to an

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